

25/36

10 20 30 40 50 60

Tth MRL L L F R O R N F R N L A L E A Y R P P P G L S A L V G A N A A Q G K T S L L L G T H L A - - L G G E V P L G L
Eco M S L L R L R L T R D F E R N I E T A D L A L S P G F E N F L V G A N G S G K T S V L E A I Y L T L G H G R A F R S L O I L
Ppu M Y I T Q N L E L T A V R N Y D L H P V T L L P S P R I N V I L V G A N A Q G K T S V L E A V H L G L A R S F R S T R L
Bsu M Y I T Q N L E L T A V R N Y D L H P V T L L P S P R I N V I L V G A N A Q G K T S V L E A V H L G L A R S F R S T R L
Mtu M Y I T Q N L E L T A V R N Y D L H P V T L L P S P R I N V I L V G A N A Q G K T S V L E A V H L G L A R S F R S T R L
Dra M G D V R L S A L S L N Y R N L A P G T L N F P E I G V T G I V G E N G A G K T N L L E A Y L A - L T G Q T D A P R I -

70 80 90 100 110 120

Tth A D L V R F G E E F A W L H A E V E T E L G - - A Y R L E H R L G P G G R E V L L N G K R - V S L R T L W E L P G S V
Eco G R V I R H E O G E A F V L H G R L G E E E R - E T A T G L T K D K Q - G D S K V R I D G T D G H K V A E L A H L M P M Q
Ppu N P V I Q Y E O A A C T V F G E V O L T E G G T S N L I G V S R E R Q - G E F T I R I D - - - - - A L K P V F
Bsu K E L I R W D K D Y A K I E G R V M K Q N G - - A I P M O L V I S K K G K K G K V N H I E O Q K L S Q Y V G A L N T I
Mtu L P L I R V G T D R A V I S T I V V N D G R - E C A V D L E I A T G - R V N K A R L N R S S V R S T R D V V G V L R A V
Dra E Q L I Q A G E T E A Y V R A D L Q G G S - - L S I O E V G L G R G R R O L K V D G V R A R T G D L P - - R G G A V

130 140 150 160 170 180

Tth L V S P L D L E A V L G P K E R R A Y L D R L I A H F S R R Y A A L L S A Y E K I A L R O R N A L L K K A G G - - - - -
Eco L I T P E G F T L N G G G P K Y R R A F L D W G C F H N E P G F F T A W S N L K R I L L K Q R N A L L R Q V T - - R Y - -
Ppu E R T L S E L V E L D G - - - - -
Bsu M F A P E D L N L V K G S P Q V R R R F L D M E I G O V S P V Y L H D L S L V I O K I L S O R N H F L K Q L Q T R K Q T D
Mtu L F A P E D L N L V K G S P Q V R R R F L D M E I G O V S P V Y L H D L S L V I O K I L S O R N H F L K Q L Q T R K Q T D
Dra W I R P E D S E L V F G P P S G R R A Y L D S L L S R L S A R Y - G E Q L S R Y E R T V S O R N A L L R G G E E - - - - -

190 200 210 220 230 240

Tth - - - - - E G L S A W D R E L A R Y G D E I V A L R R R F L R R F A P - - - - - I L R E V H A A L A A K E A G L R
Eco - - - - - E Q L R P W D K E L I P L A E Q I S T W R A E Y S A G I A A D M A D T C K Q F L P E F - S L T I F S F O R G W E
Ppu R - - - - T M L D V L T D Q L V E V A A K V V V K R L Q F T A Q L E K W A Q P I H A G I S R G L E E L T L K Y H T A L D
Bsu D R G V F D T L D L W D S R L A E H G A E L V A A R I D L V N Q L A P E V K K A Y Q L L A P E S R S A S I G Y R A S M D
Mtu - - - - - W A M H V W D D V L L K L G T E I M L F R R R A L T R L D - - - - - E L A R E A N A Q L G S R K T L A
Dra - - - - - L W D L - - - - - R - - - - -

250 260 270 280 290 300

Tth L E E T A G E G - V L R A L E A S R A E - - - - - E R E - - R G O T L V G P H R D D L V E L L E G R P A H R I A S R I
Eco K E - - T E - - - - - Y A E V L E R N F E - - - - - R D R Q - - L T Y T A H G P H K A D L R I R A D G A P E D T L S R I
Ppu K D - - R E - - - - - L Q E V L A S S L L - - - - - R D Q Q - - M G H T Q A G P O R A D L R L R L A G N N A D I L S R I
Bsu V S D P L D L S K I G D S Y Q E A F S K - - - - - L R E K E I E R G V I L S G P H R D D L L F Y V N G R D V Q T Y G S Q
Mtu V T G P S E Q S D I D R Q L A A R L L A A L A A R R D A E L E R G V C L V G P H R D D L L R L G D P A K G F A S H
Dra L T L T E S - - T S P E T Y A A D L R G - - - - - R A E L L A R G S T V T G P H R D D L L L T L G D F A S G D Y A S R I

310 320 330 340 350 360

Tth G E A K T L A L A L R L A E H R L G E H H G E P P I L L V D E W G E E L D E A R R R A V L A Y A Q A L P Q A T L A G L
Eco G O L K L L M C A L R L A O G E F L T R E S G R R C L Y L I D D F A S E L D D E R R R G L L A S R L K A T O S O V I F V S A
Ppu G Q Q K L L V C A L R T A Q E H L V S Q A R R G H C I Y L V D D L P S E L D D Q H R R A L L R L E E L R C Q C S S P V
Bsu G Q Q R T I T A L S L K A I E D I L H E E I G E Y P I L L D D V L S E L D D Q R O S H L L C H T I Q G - R V O I T F V T I
Mtu G E A W S L A V A L R L A A Y O L L R V D - G G E P V L L L D D V F A E L D V M R R R A L A T A A E S - A E Q V L V T A
Dra G E G R T V A L A L R R A E L E L L R E K F G E D P V L L L D D F T A E L D P H R R Q Y L L D L A A S V P Q A I V T G T

370 380 390

Tth E A P P G V P V C S V V R G V V L C P G A
Eco I S A E H V I D M S D E N S K M F T V E K G K I T D
Ppu T S V D G T I D H E T L R I A G M F R V O N G A L V K
Bsu A V L E D I P A G W D A R R V H I D V R A D D T G S M S V V L P
Mtu E L A P G A A L T R A O A G R F T P V A D E E M Q A E G T A
Dra

343 357 233 370 385 359

FIG. 27

**13/36**

Motif I			
RecJ_Tt	[73]	KRIRVHGDDADGLTGTAILLVRGLAALG	[100]
RecJ_Ec	[73]	TRIIIVGDFDADGATSTALSVLAMRSLG	[100]
RecJ_Aa	[78]	KRIIIYGDYDVGITGTAILYRVLKLLG	[105]
RecJ_Hp	[47]	TEILVVGDDADGVISSAIIKFFESLN	[74]
RecJ_Hi	[68]	QKIVIVGDFDADGATSTALSVLALRQLG	[95]
PPX1_Sc	[30]	TICVGNESADMDSTIASAITYSYCQYIYN	[57]
PRUNE_Dm	[38]	HLVMGNESCDLDSAVSAITLAFVYAASS	[65]
Motif II		Motif III	
RecJ_Tt	[129]	SDLFLITVDCCGITNHAELRE	[147]
RecJ_Ec	[131]	AQLIVITVDNGISSHAGVEH	[149]
RecJ_Aa	[133]	GDFLIITVDNGTSAVEEIDQ	[151]
RecJ_Hp	[102]	APLIITVDNGINAFEAARF	[120]
RecJ_Hi	[126]	VQLLMTVDNGVSSFDGVAF	[144]
PPX1_Sc	[120]	ELNSYLVNDNDTPKNLKNY	[138]
PRUNE_Dm	[88]	PLVCEMWDRCARVALPRRY	[106]
Motif IV		Specific Motif	
RecJ_Tt	[210]	YADLAAGVTIADVAPLWGW	[228]
RecJ_Ec	[226]	LLDLVALGTIADVVPIDAN	[244]
RecJ_Aa	[215]	FLDLVALGLLADYMPVNPV	[233]
RecJ_Hp	[189]	LLCLAGVATIADMPLTFF	[207]
RecJ_Hi	[219]	LLDLVALGTIADVVPIDQN	[237]
PPX1_Sc	[191]	IALLLMGATLIDTSNMRRK	[209]
PRUNE_Dm	[183]	VAQLLHATIVLDTINFAPA	[201]

Tt : Thermus thermophilus HB8, Ec : Escherichia coli, Aa : Aquifex aeolicus.

Hp : Helicobacter pylori, Hi : Haemophilus influenzae Rd.

Sc : Saccharomyces cerevisiae, Dm : Drosophila melanogaster

FIG. 14